(No Model.) 2 Sheets—Sheet 1.

J. THOMPSON.

CIGAR AND CIGARETTE MACHINE.

No. 353,517. Patented Nov. 30, 1886.

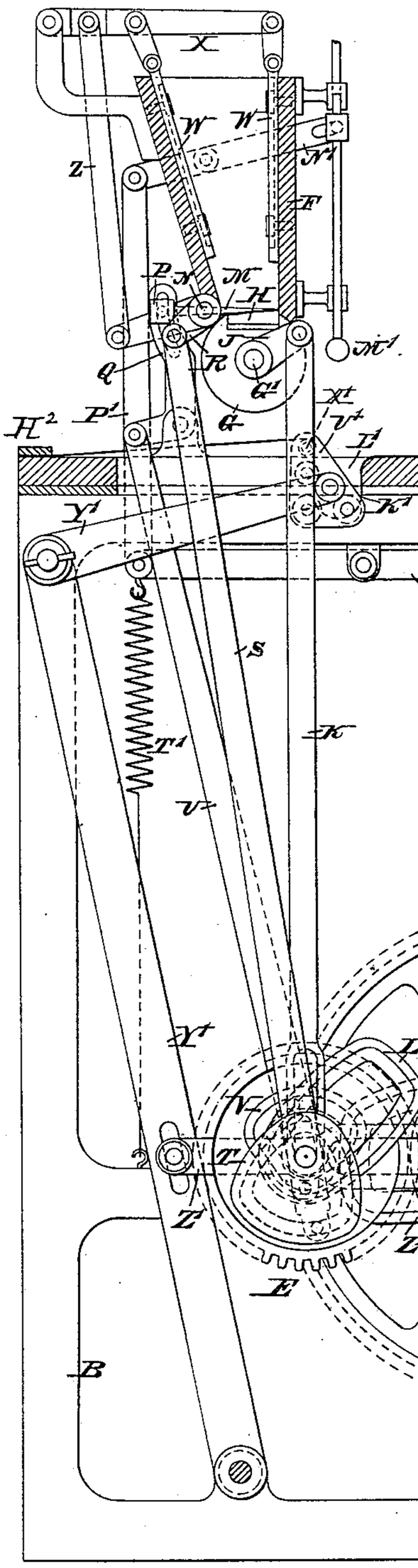
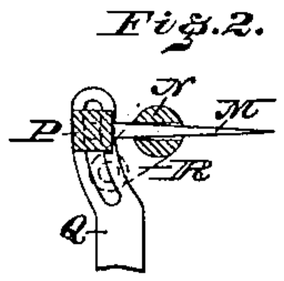


Fig. 1.



WITNESSES:

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(No Model.) 2 Sheets—Sheet 2.

J. THOMPSON.

CIGAR AND CIGARETTE MACHINE.

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Fig. 3.

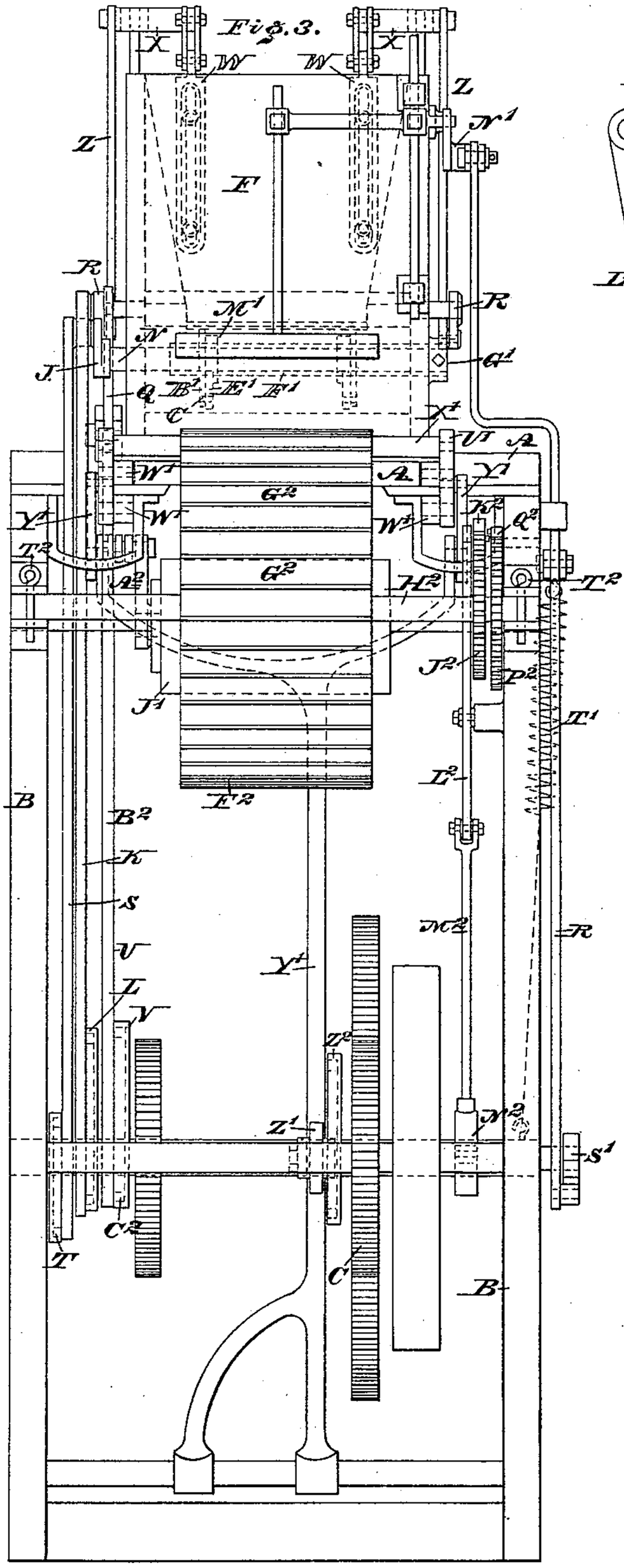

Fig. 8.

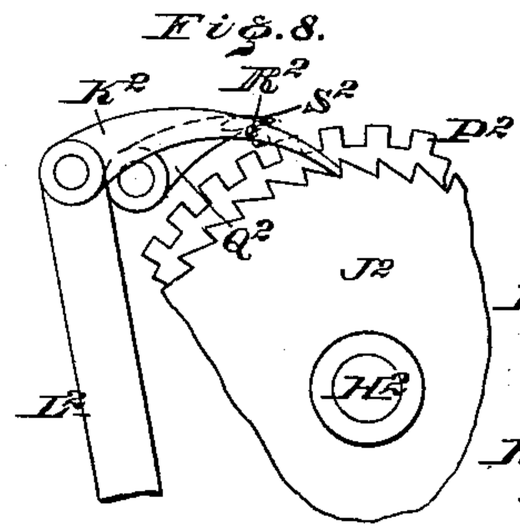

Fig. 9.

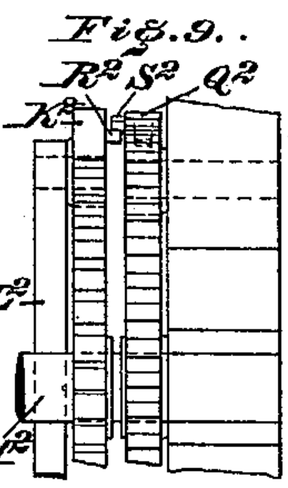

Fig. 4.

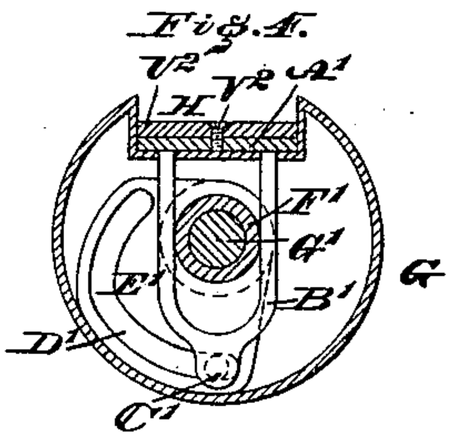

Fig. 5

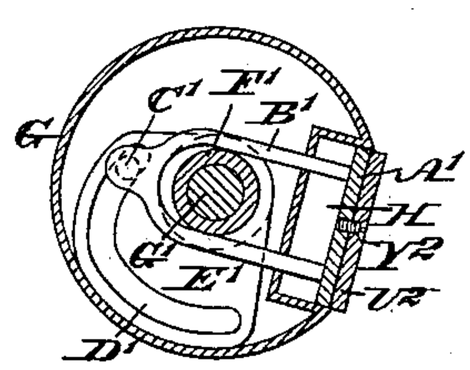

Fig. 6.

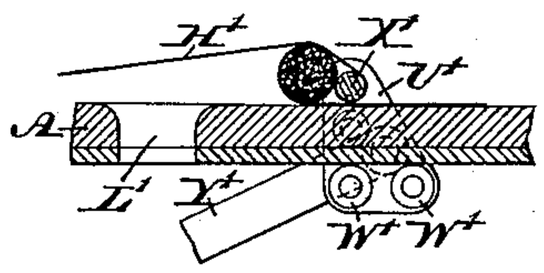

Fig. 7.

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UNITED STATES PATENT OFFICE.

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CIGAR AND CIGARETTE MACHINE.

SPECIFICATION forming part of Letters Patent No. 353,517, dated November 30, 1886.

Application filed January 12, 1886. Serial No. 188,303. (No model.)

To all whom it may concern:

Be it known that I, JOHN THOMPSON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Cigar and Cigarette Machines, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a partial side elevation and partial vertical section of a cigar and cigarette machine embodying my invention. Fig. 2 represents a vertical section of a detached portion thereof. Fig. 3 represents an end elevation of the machine at a right angle to Fig. 1. Figs. 4 and 5 represent vertical sections of the charging device of the machine. Fig. 6 represents a vertical section of part of the table, apron, and carriage of the machine. Fig. 7 represents the form assumed by the apron during the bunch-forming operation. Figs. 8 and 9 are side elevations of portions of the pocket wheel.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of novel features in cigar and cigarette machines, as will be hereinafter fully set forth.

Referring to the drawings, A represents a table, which is supported on a frame, B.

C C× D E represent gear-wheels, which are mounted on the frame B and geared together, the shaft of the gear-wheel C being the driving-shaft. Supported above the table A is a hopper, F, and between the table and hopper is mounted a charger, G, the same consisting of a rotary cylinder having in its periphery a pocket, H, which in its normal position is in communication with the bottom or outlet of the hopper, as shown in Fig. 1. Motion is imparted to the cylinder by means of a crank-arm, J, to which is pivoted an arm, K, the lower end whereof is engaged by a cam, L, on the shaft of the gear-wheel E.

M represents a fork, which is passed freely through a rock-shaft, N, mounted at the lower part of the hopper F, said fork being adapted to enter the hopper and emerge therefrom, its head P entering a curved slot in a bracket, Q, which is pivoted to the frame B of the machine. The rock-shaft N has connected with it an arm, R, to which is pivoted an arm, S, the latter being operated by a cam, T, on the shaft of the wheel E. The bracket Q has pivoted to it an arm, U, which is operated by a cam, V, on the shaft of the wheel E, it being seen that the fork is raised and lowered by means of the rock-shaft N, and moved in and out of the hopper by means of the bracket Q.

Within the hopper are agitators W, which, consisting of plates or boards, are fitted to the sides of the hopper and connected by means of links with an arm, X, which is mounted on the hopper by a suitable bracket, and has pivoted to it an arm, Z, secured to the rock-shaft N. By these means the agitators are operated and motion imparted to the tobacco in the hopper, preventing clogging of the same. Within the pocket H is a discharge-plunger or throw-out A′, to which is connected arms B′, which pass through the base of the pocket near each end thereof, and carry pins or studs C′, the latter entering the cam-slot D′ of a piece E′, which is located within the cylinder and rigidly connected with a sleeve, F′, which is rigidly secured to the frame of the hopper and having within it the shaft G′, on which the charging-cylinder G is mounted, it being seen that when the cylinder rotates the piece A′ is moved in opposite directions, the tendency of which is to discharge the contents of the pocket, the operation being fully illustrated in Figs. 4 and 5.

H′ represents an apron, which is connected with one end of the table A at H², and extends over the top of the table and around the opposite end of the same and under said end, from which it extends to a drum, J′, which is mounted beneath the table, said apron being held sufficiently slack that a loop, K′, may be formed in the same, for which purpose a slot or recess, L′, is formed in the table, the same being adjacent to the charger G.

Supported on the hopper is a vertically-moving head, M′, which is located above the recess L′, so that when it descends it bears down the apron into said recess, thus forming the loop K′. The head M′ is connected with an arm N′, which, by means of arms P′ P′, is connected with an arm, Q′, which is pivoted to the frame B, and receives motion in one direction by means of an arm, R′, the latter

being engaged by a cam, S′, on the shaft of the wheel D, the motion of the arm Q′ in the opposite direction being imparted by a spring, T′, secured to said arm and the frame of the machine.

U′ represents a carriage which is formed of side plates with rollers W′, which are guided on a shoulder on the table A, said shoulder preventing lateral motions of the carriage, said carriage having also a roller, X′, which occupies a position between the table A and apron H′. To the carriage is pivoted a jointed arm, Y′, which at its lower end is pivoted to the lower part of the frame B and connected with an arm, Z′, which engages a cam, Z^2, on the shaft of the wheel D. By these means the carriage is advanced in opposite directions.

The drum J′, to which one end of the apron H′ is secured, has connected with its shaft an arm, A^2, which is attached to an arm, B^2, the latter being engaged by a cam, C^2, on the shaft of the wheel D, whereby oscillating motions are imparted to the drum J′, the effect of which is to slacken the apron at a certain time and take up the slack at another time.

In order to adjust the tension or length, or both, of the apron, the drum J′ is fitted loosely on its shaft, and carries a dog or pawl, D^2, which engages with a toothed wheel or ratchet, E^2, which is fixed to said shaft. By raising the pawl D^2 clear of the ratchet the drum J′ may be rotated, as required, so as to take up or let out the apron, after which the pawl is re-engaged with the ratchet, locking the wheel J′ to the shaft.

On the end of the frame, near the drum J′, is a wheel or drum, F^2, the periphery whereof is formed with pockets G^2, said wheel being freely mounted on its shaft H^2. Connected with the side of the wheel F^2 is a ratchet, J^2, with which engages a pawl, K^2, which is hung on an arm, L^2, pivoted to the frame B, said arm being pivoted to an arm, M^2, which is engaged by a cam, N^2, on the shaft of the wheel D, by which means intermittent motion is imparted to the pocket-wheel. To the side of said wheel is also secured a toothed rim, P^2, with which is adapted to engage a dog, Q^2, pivoted to the frame of the machine.

On the sides of the pawls or dogs K^2 Q^2 which face each other are lugs R^2 S^2, respectively, which project toward each other, and so disposed that when the pawl K^2 is advanced and engages with the ratchet the wheel F^2 receives its motion, and the lugs R^2 engage with the lug S^2, whereby the dog Q^2 is raised and disengaged from the rim P^2. As soon as the pawl K^2 has completed its stroke the lugs R^2 S^2 are tripped, whereby the dog Q^2 drops and engages with the rim P^2, preventing return motion or shifting of the wheel F^2, as the pawl K^2 returns to take a new hold of the ratchet. The pocket-wheel or drum F^2 has its axis or shaft removably mounted on the frame B, so that said wheel may be displaced and another substituted therefor. In order to hold the wheel in position, the bearings of the shaft are open on one side and provided with pins T^2, which pass through the walls of the bearing at the open sides, as will be seen in Fig. 1.

The throw-out piece A′ of the charging-cylinder has a false or extra bottom, U^2, which may be set in or out from the piece by means of screws V^2, whereby the capacity of the pocket H may be adjusted to different sizes of cigars and cigarettes.

When the parts are in the position shown in Fig. 1 and the machine is set in motion, the fork or comb M rises, and, owing to its position in the rock-shaft N, which is oscillated by means of the arms R and S and cam T, assumes a diagonal position, its point projecting upwardly, and then, by means of the bracket Q, arm U, and cam V, enters the hopper, piercing the tobacco, after which it lowers, owing to the oscillation of the rock-shaft N, thus forcing down a quantity of tobacco into the pocket H of the discharger, when it is withdrawn from the tobacco by means of the bracket Q, so that it does not carry with it in its upward movement any of the tobacco. The latter now rotates until the pocket is opposite the loop in the apron, when the plunger A′ is advanced and the charge of tobacco dropped into said loop. The carriage U′ is now advanced, whereby the charge of tobacco is carried along and rolled, forming a bunch, which, when it reaches the pocket of the wheel F^2, adjacent to the end of the table, falls thereinto, and, owing to its tendency to swell, is firmly retained therein. Meanwhile the carriage is returned to the first position, the head M′ descends, forming a loop in the apron, and the fork M emerges from the hopper stripped of tobacco, then returns with the rock-shaft, so that it points upwardly, and re-enters the hopper, and consequently piercing the tobacco therein. The charger also returns to its first position, so that its pocket is in communication with the base of the hopper, and another charge of tobacco is forced into the pocket and directed into the loop and rolled along by the apron until it reaches the pocket-wheel, which, having rotated the distance of one tooth of the ratchet-wheel J^2, presents another pocket, and thus the work continues until the pocket-wheel is filled, when it is removed and an empty wheel substituted for the same, after which the several operations are repeated as long as required.

It is of course understood that the binder of the bunch is placed on the apron H′ and inserted in the loop K′, and afterward carried along and rolled by the apron with the bunch within the same, in which condition it is dropped into the pocket of the wheel F^2.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cigar-machine, a fork passing freely through a rocking shaft, in combination with a hopper and means, substantially as de-

scribed, for oscillating the said rocking shaft and for reciprocating said fork, substantially as and for the purpose set forth.

2. In a cigar-machine, a charger having a discharge-plunger, with a pushing-plate provided with a detachable bottom piece and with arms embracing the shaft of the charger, the said arms being provided with studs, in combination with fixed slotted plates, substantially as and for the purpose set forth.

3. In a cigar-machine, the hopper F, in combination with the rocking shaft N, the fork M, loosely passing through said shaft, bracket Q, pivoted to the frame A, frame A, and means, substantially as described, for oscillating said shaft and for operating said bracket, substantially as and for the purpose set forth.

4. In a cigar-machine, the hopper F, in combination with agitators W, fitted to the inner sides of said hopper and connected by links to pivoted arms X, pivotally secured to a bracket attached to said hopper, and means, substantially as described, for imparting a rising and falling motion to said agitators, substantially as and for the purpose set forth.

5. In a cigar-machine, the hopper F, in combination with the rock-shaft N, the fork M, the slotted bracket Q, pivoted to the frame A and pivotally connected to the fork M, and means, substantially as described, for oscillating said rock-shaft N and for operating said bracket Q, substantially as and for the purpose set forth.

6. In a cigar-machine, the combination of the hopper F with the head M′, connected by the pivoted arms N′ to arms P′, the pivoted arm Q′, connected to the arm R′, and means, substantially as described, for operating the said arm R′, whereby a rising and falling motion is imparted to said head M′, substantially as and for the purpose set forth.

7. In a cigar-machine, the apron H′, with loop K, and with means connected thereto, substantially as described, for adjusting the slack therein, in combination with the table A, having recess L′, the rising and falling head M′, the reciprocating carriage U′, and pocket-wheel F^2, and suitable devices for connecting and means, substantially as described, for operating said parts, as stated.

8. In a cigar-machine, the apron H′, in combination with the table A, having recess L′, the drum J′, loosely mounted on its shaft, the wheel E^2, rigidly mounted on the same shaft, pawl D^2, secured to the end of said drum, arms B^2 and A^2, and means, substantially as described, for operating said arm A^2, substantially as and for the purpose set forth.

9. In a cigar-machine, a charger having a pocket in its periphery, in combination with the discharging-plunger A′, having arms B′ with studs C′, the slotted piece E′, rigidly secured to the sleeve F′, and hopper F, to which said sleeve F′ is secured, and means, substantially as described, for oscillating said charger, substantially as and for the purpose set forth.

JOHN THOMPSON.

Witnesses:
JOHN A. WIEDERSHEIM,
A. P. GRANT.